

REMARKS

This submission is in response to the Office Action mailed August 2, 2010. Claims 1-7, 9-16, 18 and 20-22 are currently pending in this application. By this response, Applicants have amended Claims 1 and 14. The amendments to these claims are intended to clarify that which Applicants regard as the invention. In particular, the amendments clarify that the application techniques recited in the claims define a material property of the lacquer layer, rather than a process by which it can be created. Accordingly, no new subject matter has been added by this response. Applicants respond specifically below to the issues raised in the subject Office Action and respectfully request reconsideration.

Telephonic Interview Summary

Applicants thank Examiner Kyle Robert Grabowski for extending the courtesy of a telephonic interview conducted on October 22, 2010, during which meaningful and constructive dialogue was conducted to advance prosecution of the present application. During the interview, the recitation of “printing, scattering, sprinkling and spraying” as used in the claims was discussed, particularly with regard to the PVC material cited in the prior art. At that time, the undersigned suggested amending the claims to recite that the claimed lacquer layer is one that can be applied by the noted methods. In this way, not just any lacquer is defined by the claim but rather one that can be printed, scattered, sprinkled and sprayed, making one or more of these characteristics a structural element of the claim. Examiner Grabowski acknowledged that this proposed claim amendment would change the product by process characteristic of the pending

claims, but reserved the right to consider the claim amendments more fully when presented as part of a formal response and potentially update his search based on those amendments.

It should be further noted that the Substance of the Interview mailed November 19, 2010 accurately reflects the summary of what was discussed during the subject interview.

Claim Rejections Under 35 U.S.C. §103

Claims 1-16, 18 and 20 stand rejected under 35 U.S.C. §103(a) as being unpatentable over European Patent No. 1,398,174 to **Moreau** in view of U.S. Published Patent Application 2005/0040641 to **Cote** et al. Applicants traverse this rejection and respectfully request reconsideration and withdrawal of the pending rejections of the claims herein. Applicants' prior responses to Office Actions described various aspects disclosed by both Moreau and Cote, and those arguments are hereby incorporated by reference.

The subject Office Action admits that Moreau does not disclose providing a lacquer layer (a sealing layer) that is applied by printing, pouring, sprinkling or spraying. But the pending prior art rejection attributes no weight to the recitation of "printing, pouring, sprinkling or spraying," dismissing such claim terms as product by process limitations. Nonetheless, Cote is cited in the Office Action as an obvious combination with Moreau by providing a protective layer of lacquer, particularly polyethylene terephthalate (PET), regardless of whether it can or can't be applied as a printed coating. However, in view of the amendments presented herein, Applicants respectfully traverse this combination as failing to meet each limitation of the claim and request reconsideration of the claim rejection.

The independent claims, particularly Claims 1 and 14, are hereby amended to define that the lacquer is one that can be applied by printing, scattering, sprinkling and spraying, rather than reciting that the lacquer layer is applied by one of those methods. In this way, the current claim does not purport to actually require that the lacquer be applied by a particular method, but rather that the lacquer be one that has characteristics that allow it to be applied in one of those ways (i.e., a limitation of the lacquer, not the method by which it is applied). The claims now clearly define structural differences over the cited prior art.

Thus, Applicants once again indicate that the type of polymer resins disclosed by Cote have a very viscous rubbery nature that would prevent them from being applied as a printed coating, which is particularly true of PET. Submitted herewith is a Declaration under 37 CFR §1.132 from one of the subject inventors, Dr. Ludwig Brehm. Dr. Brehm has extensive experience in the fields of security printing inks, heat stamping technology, polymer electronics and metallo-organic compounds and is very familiar with the materials used in his field of work. His statements are presented herein to support the factual assertion that PET can not be applied by printing, scattering, sprinkling or spraying.

In his declaration Dr. Brehm states that:

- *PET is generally formed as a film produced by extrusion of melted, liquid PET. Usually the extruded and solid PET film is stretched to create mono-axially or biaxially oriented PET. During the stretching process the PET will be cooled and mechanically mono-axially or bi-axially stretched. Because of the combined cooling*

and stretching the PET partially crystallizes and a transparent semi-crystallized polymer is produced. That semi-crystallized PET is mechanically stable and transparent. Therefore a commonly used PET film comprises crystals which can be detected by checking its linear polarization properties with a linear polarization filter or by means of radiation with X-ray (use of a PET sample in powder form in X-ray radiation) for checking the Bragg scattering generated by the crystals in the PET polymer. The amount of Bragg scattering is a measure for the amount of crystals in the PET polymer.

- *More generally, PET is a thermoplastic polymer which cannot be printed, scattered, sprinkled or sprayed due to its intrinsic viscosity: it is simply too viscous for application in these ways. Generally, the dynamic (absolute) viscosity is a measure of the tangential force per unit area required to move one horizontal plate with respect to another, having the measured fluid disposed between the two opposed plates, at unit velocity while maintaining the plates a unit distance apart. Upon information and belief, PET has a dynamic viscosity of approximately 50 Pa·s to 200 Pa·s (or 50,000 mPa·s to 200,000 mPa·s, measured at 280°C) for PET films or sheets. In comparison most printing inks and common printing lacquers have dynamic viscosities of approximately 50 mPa·s to 200 mPa·s (inks or lacquers for gravure printing, measured at room temperature) or 200 mPa·s to 1,000 mPa·s (inks or lacquers for screen printing, measured at room temperature). Thus, PET clearly has a much higher dynamic viscosity as compared to other common substances used in*

printing and is far too viscous to be printed, scattered, sprinkled or sprayed. For this reason, PET is typically used to form films or items of greater thickness by extrusion. It should also be noted that PET is solid at room temperature (which is the common measurement temperature for the viscosity of printing inks and lacquers). Also, most printing inks and common printing lacquers would be vaporized or pyrolyzed at 280°C (measurement temperature for the viscosity of PET).

- Additionally, there are a very limited number of solvents which can be used to solve PET, the most common being phenol or its derivatives, which are malodorous, toxic substances. Also, a very high level of heat is required to dissolve PET. During the evaporation of phenol, a partial ester interchange takes place, resulting in low-molecular phenol esters of the phthalic acid. Such environments are not suitable for printing on typical substrates, such as paper or even polymer mixes.*
- Accordingly, PET is not suitable to be printed, scattered, sprinkled or sprayed.*

Accordingly, Cote could not reasonably disclose applying a thick PET printed coating, since PET and the other polymers disclosed by Cote are far too viscous and could only be used to form films or items of greater thickness by extrusion. In fact, one of ordinary skill would find reason not to attempt such an application of PET due to the toxic environment in which it exists when in molten form. Additionally, even the more fluid version of PET existing at 280°C, which is still incredibly thick, would destroy the paper substrate and/or the printing inks upon which it is applied. What is more, while Cote hints that a printed protective layer could be applied, it fails

to disclose a printed coating that matches the expansion coefficient of the film element, as defined by the pending claims, particularly Claims 1 and 14. Such a selection of a protection layer is neither disclosed nor reasonably suggested by the prior art.

Therefore, the combination of Moreau and Cote fails to teach each of the elements of the claimed invention. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103 of all the claims presented.

Conclusion

Applicants submit that the amended claims, particularly independent Claims 1 and 14, are patentable over the prior art. What is more, dependent Claims 2-7, 9-13, 15, 16, 18 and 20-22, which ultimately depend from Claims 1 and 14, are similarly patentable over the art of record by virtue of their dependence. Also, Applicants submit that Claims 2-7, 9-13, 15, 16, 18 and 20-22 define patentable subject matter in their own right.

Applicants: Brehm, et al.
Serial No.: 10/599,066
Docket No.: 1093-162 PCT/US/RCE
Response to Non-Final Office Action Mailed August 2, 2010
Page 13 of 13

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and allowance of the claims presented. If the Examiner has any questions or suggestions to expedite allowance of this application, he is cordially invited to contact Applicants' attorney at the telephone number provided.

Respectfully submitted,

/tony a. gayoso/

Tony A. Gayoso

Registration No.: 37,331

Attorney for Applicants

HOFFMANN & BARON, LLP
6900 Jericho Turnpike
Syosset, New York 11791
(516) 822-3550

TAG:lg
346017_1.DOC